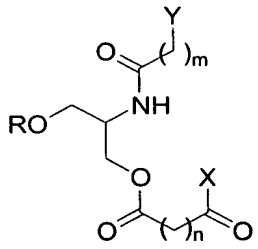
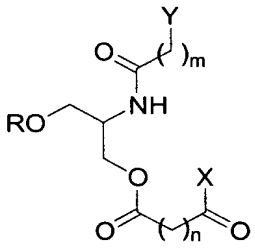
WE CLAIM

[C1] A linker comprising a compound of the formula:



wherein R is selected from the group consisting of hydrogen and an oxygen protecting group, m and n are integers independently selected from the group consisting of 1, 2, 3, 4, 5, 6, 7, and 8; X is an optionally substituted first heteroatom; and Y is an optionally substituted second heteroatom.

[C2] A linker comprising a compound of the formula:



wherein R is selected from the group consisting of hydrogen and an oxygen protecting group, m and n are integers independently selected from the group consisting of 1, 2, 3, 4, 5, 6, 7, and 8; X is an optionally substituted heteroatom; and Y is an optionally substituted nitrogen or an optionally protected nitrogen.

[C3] The linker of claim 2 wherein X is a substituted heteroatom, where at least one of the substituents comprises a solid support.

[C4] The linker of claim 2 wherein X is a substituted nitrogen, where at least one of the substituents comprises a solid support.

[C5] The linker of claim 4 wherein the solid support is an insoluble silica support.

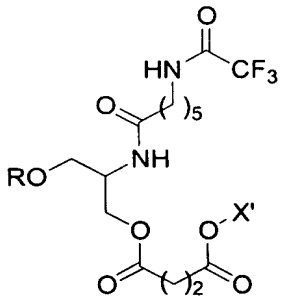
[C6] The linker of claim 4 wherein the solid support is selected from the group consisting of controlled pore glass, long chain controlled pore glass, glass slides, and plastic slides.

[C7] The linker of claim 2 wherein Y is a substituted nitrogen, where at least one of the substituents comprises a solid support.

[C8] The linker of claim 7 wherein the solid support is a gel.

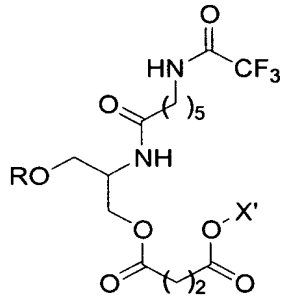
[C9] The linker of claim 2 wherein Y is a substituted nitrogen, where at least one of the substituents is selected from the group consisting of diagnostic agents, fluorescent agents, and radioactive agents.

[C10] An oligonucleotide linker comprising a compound of the formula:



wherein R is dimethoxytrityl; and X' is succinimid-*N*-yl.

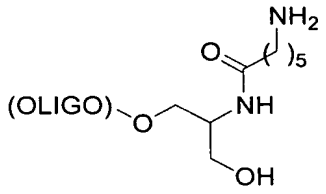
[C11] An oligonucleotide linker of the formula:



wherein R is dimethoxytrityl; and X' comprises an insoluble silica support.

[C12] The olinucleotide linker of claim 11 wherein the insoluble silica support is controlled pore glass, long chain controlled pore glass, and glass slides.

[C13] An oligonucleotide conjugate of the formula:



wherein OLIGO is an oligonucleotide coupled at the 3'-end.

[C14] A method for preparing an aminopolyol linker, the method comprising the steps of:

(d) protecting a first hydroxyl group of an aminopolyol by reacting the first hydroxyl group with a compound of the formula R-L, where R is an oxygen protecting group, and L is a leaving group;

(e) acylating the amine of the hydroxyl protected aminopolyol; and

(f) acylating a second hydroxyl group of the aminopolyol.

[C15] The method of claim 14 wherein the protecting step includes protecting a first hydroxyl group of serinol.

[C16] A method for preparing the compound of claim 1, the method comprising the steps of:

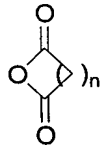
(d) protecting a first hydroxyl group of serinol by reacting the first hydroxyl group with a compound of the formula R-L^1, where R is an oxygen protecting group, and L^1 is a leaving group;

(e) acylating the amine of serinol by reacting the amine with a compound of the formula Y-$(CH_2)_m$-C(O)-L^2, where L^2 is a second leaving group; and

(f) acylating a second hydroxyl group of serinol by:

(1) reacting the second hydroxyl group with a compound of the formula X-C(O)-$(CH_2)_n$-C(O)-L^3, where L^3 is a third leaving group; or

(2) reacting the second hydroxyl group with an anhydride of the formula:



and reacting the resulting product with a compound capable of forming an activated ester derivative.

[C17] The method of claim 16 wherein the protecting step includes reacting the first hydroxyl group with DMTr-Cl.

[C18] The method of claim 16 wherein the acylating step (b) includes acylating the amine with *N*-hydroxysuccinimid-*O*-yl 6-(*N*-trifluoroacetylamino)caproate.

[C19] The method of claim 16 wherein the acylating step (c) includes acylating the second hydroxyl group with succinic anhydride and reacting the resulting product with *N*-hydroxysuccinimide and an amide coupling agent.

[C20] A method for preparing the compound of claim 3, the method comprising the steps of:

(f) protecting a first hydroxyl group of serinol by reacting the first hydroxyl group with a compound of the formula $R\text{-}L^1$, where R is an oxygen protecting group, and L^1 is a leaving group;

(g) acylating the amine of serinol by reacting the amine with a compound of the formula $Y\text{-}(CH_2)_m\text{-}C(O)\text{-}L^2$, where L^2 is a second leaving group;

(h) acylating a second hydroxyl group of serinol by reacting the second hydroxyl group with a cyclic anhydride; and

(i) reacting the product from step (c) with a compound capable of forming an activated ester derivative with the product of step (c).

(j) reacting the product from step (d) with the solid support.

[C21] The method of claim 20 wherein the reacting step includes reacting the product from step (d) with controlled pore glass.

[C22] A method for fabricating a support with 3'-aminomodified oligonucleotides, the method comprising:

(a) obtaining one or more aminomodifiers according to claim 5;

(b) coupling one or more oligonucleotides to the one or more aminomodifiers to form one or more oligonucleotide-aminomodifier conjugates; and

(c) coupling the one or more oligonucleotide-aminomodifier conjugates to the support.

[C23] The method of claim 22 wherein the support is selected from the group consisting of glass, matrix, gel pads, and plastic.

[C24] The method of claim 22 wherein the one or more oligonucleotides have a length in the range from about 6 to about 100 nucleotides.

[C25] The method of claim 24 wherein the oligonucleotides have a length in the range from about 10 to about 100 nucleotides.